

NAME

Episode 8

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3 SPEAKERS

Elisabeth Riemann

Jadga Huegle

Jens Moenig

START OF TRANSCRIPT**[00:00:10] Elisabeth Riemann**

Welcome to openSAP Invites, I'm your host, Elisabeth Riemann, and in this entertaining episode we'll be learning more about the visual drag and drop programming language Snap! with our in-house experts Jadga Huegle and Jens Moenig. Thanks to Jadga and Jens' creativity and passion for Snap!, we discover just how easy and fun it can be to hone our programming skills. We'll be talking about music, art, numbers, and the power of community. Together, let's discover the bright side of computer science. Jadga Huegle is originally a biologist who discovered her interest in computer science while building a small, connected greenhouse. Since then, she's become a Snap! enthusiast and is eager to share her excitement with everyone she meets. Jadga works for SAP's Snap! team and develops, among other things, learning materials for openSAP Massive Open Online courses. Jens Moenig is a Snap! lead developer and makes interactive programming languages at SAP. Ever since he helped make Scratch, Jens has fallen in love with live blocks-based computing, so much so that he quit his career as a lawyer to become a researcher and designer of such software environments. Jens wants everyone to get a chance to discover the beauty and joy of computing. In his spare time, he plays the guitar and mandolin. Let's say hello.

[00:01:42] Elisabeth Riemann

Hello, Jadga.

[00:01:44] Jadga Huegle

Hi, Lizzie.

[00:01:45] Elisabeth Riemann

Hello Jens.

[00:01:47] Jens Moenig

Hi, Lizzie.

[00:01:49] Elisabeth Riemann

Welcome, both of you, to openSAP Invites. Now we know one another from working together on the openSAP team. And so I'm thrilled that we're here today to talk about your brilliant work on Snap! It's a fabulously creative and fun programming language, and your expertise and enthusiasm for the topic always shines through. And your latest Snap! course, From Media Computation to Data Science, ran from September to October. And I have to say that when I read the course description, I was completely enthralled. It reads a new way to learn general-purpose programming by playing with the ingredients of your favorite pictures, music, movies, and books. So, wow. And you ask us learners, if we've ever wished for our sunset pics to be more awesome than our holidays. Yes, I have. And if we've ever wanted to turn our own voice into a musical instrument. Now, I've never really thought about this before, but actually I so would. So this leads to our warm up question. Jadga, if you could turn your voice into a musical instrument, what instrument would you choose and why?

[00:02:55] Jadga Huegle

I think I'm kind of okay at playing piano, newly acquired a ukulele, so I kind of play that as well. What I'm really not good at, is what you also will see in the course is playing trumpet. So I guess I would choose a trumpet.

[00:03:13] Elisabeth Riemann

A trumpet, cool.

[00:03:14] Jadga Huegle

Yeah.

[00:03:15] Elisabeth Riemann

And Jens, what instrument would you choose?

[00:03:18] Jens Moenig

Well, you know, much as I'm a programming language agnostic when it comes to musical instruments, I'm somewhat of a pantheist, why choose one when you can have them all?

[00:03:32] Elisabeth Riemann

So a whole orchestra.

[00:03:33] Jens Moenig

Yes, I basically try everything I can lay my hands on and. Yeah.

[00:03:40] Elisabeth Riemann

Brilliant. Oh, I love that answer. So let's talk about Snap! Now, what is Snap! exactly? And who is it aimed at? Jens, can you tell us about Snap!?

[00:03:49] Jens Moenig

Well, Snap! is a visual programming language that lets you write code by assembling graphical building blocks into constructions that can resemble kind of little Lego houses or towers. And these buildings describe an interactive story, a simulation or a video game. And the cool thing is then you can tell the computer to run it. So it's really two things that make Snap! stand out among the crowd of blocks-based programming environments. Snap! supports functional programming, so it literally lets you build any blocks you can think of, including things that usually come prepackaged with the programming language like control structures. Repeat If things. And the other big thing about Snap! is that it's always live. You can click on anything as you're building it and run it right there and then as you're constructing it. And that invites you to discover the ideas by playing with them, by interacting with them.

[00:05:03] Elisabeth Riemann

Mm hmm, and I love that immediate satisfaction right that you say it's always live and so it's immediately there as well. And do you think that anyone can learn to program with Snap!?

[00:05:14] Jens Moenig

Sure programming isn't magic, it's entirely learnable, and there is this rich history and culture of learning to program, we know how to teach programming, but, you know, that said, it might not be for everybody to pursue professionally. So we believe that programming can and should be fun. And, you know, you can have these earth shaking things that you discover as you learn programming. And so we think it's everybody's human right to be offered to learn to program. But that doesn't mean everybody has to turn into a professional programmer. So it's great to entice people to experiment with programming because it's something that lets you reflect on the creative process, lets you think about thinking. And yes, it's entirely learnable.

[00:06:13] Elisabeth Riemann

Brilliant. I was really glad to hear that most people can learn who want to and really have that fun when it comes to programming. And might I ask, where does the name Snap! come from? It's a cool name in itself. So can you explain where that name comes from?

[00:06:37] Jens Moenig

So when we started, it was called BYOB, and that was an acronym for Build Your Own Blocks. That was kind of the working title that we started out with. And it got really popular with that name. And it also was kind of a joke because kids were saying, oh, we're doing BYOB at school. And then as we reached more schools, some teachers in the US said we cannot use this programming language under this name anymore because we might get into trouble with the school board or with parents implying that, you know, there's also this other meaning of that acronym which says bring your own bottle, implying that there is alcohol and so that the mere existence of the alcohol might get us into trouble. So they suggested we rename it. And actually what happened was that Brian Harvey, the co developer, asked some kids on the Scratch forum to suggest a new name. And the kids came up with Snap!, which we like because it's a single syllable. It's just four letters. It kind of resembles what you actually do as you assemble these blocks. And that's

[00:08:04] Elisabeth Riemann

Yeah, thanks.

[00:08:04] Jens Moenig

How it came to pass.

[00:08:06] Elisabeth Riemann

Let's bring those things really Snap! into place, I guess, as well, it's this kind of really cool word. I remember the card game as well when I was growing up playing Snap with the matching cards. Always a lot of fun associated with

that word as well. And Jens if I heard correctly, you mentioned Scratch there when you were explaining the origin of Snap!. Where does Scratch come in here into this context?

[00:08:26] Jens Moenig

I used to work on the Scratch development team back in 2007, 2008, and the first version of Build Your Own Blocks, BYOB, was a prototype that I developed for the Scratch team at the MIT Media Lab. So for the first two versions of Snap! of BYOB, I actually forked our Scratch source code back then. And it was a couple of years later in 2010 that Brian and I decided to rewrite it all for the Web browser. So before it was a standalone application, but we found it was easier to get into schools if we didn't need there to be something that needs to be installed on computers. So we rewrote it and then we also changed the name to Snap!.

[00:09:24] Elisabeth Riemann

Thank you and for Snap!, you have a friendly yellow mascot and he's called Alonzo, and just before, just earlier, I looked at the meaning of the name and it means noble and ready for battle, which I think is kind of pretty apt, as he really does play a central and very versatile role. And I think I'd describe him as a very good sport. Right. You can do anything with him. So, Jadga, can you tell us a little bit more about Alonzo, please?

[00:09:50] Jadga Huegle

So, Alonzo, is this Snap! mascot, Snap!'s mascot, as we already mentioned, and he's named after Alonzo Church, the inventor, inventor of the Lambda Calculus. Yeah, which is kind of the mathematical heart of Snap!. Originally, Alonzo was Gobo in Scratch and he was the first mascot of Scratch before they got the Scratch cat. And when they got the Scratch cat, we got permission to use Gobo as our mascot. And Brian then added Alonzo's hair, which has the form of the Greek letter Lambda as a reference to the Lambda Calculus. So it's basically Scratch plus Lambda Calculus. That's what Snap! is.

[00:10:33] Elisabeth Riemann

Very clever, and I think he suits the name Alonzo, I have to say. And I was wondering, can you tell us a little bit more about the collaboration and partnerships at work on Snap!?

[00:10:46] Jadga Huegle

So we develop Snap! together with UC Berkeley and it's open source programming language, so we also have many contributors from elsewhere. But the Core Team is developing Snap! at SAP and at UC Berkeley. So we work together with the team that also develops the beauty and joy curriculum that Snap! was made for. And then we also work together with a lot of other organizations in the US, for example, EDC that do the high school curriculum for the beauty and joy of computing and for example, Microsoft TEALS, who have also a high school curriculum for Snap! that they use in their outreach activities. And then, as I mentioned, we have a lot of collaborators around the world. So, for example, Snap! is translated in more than 40 languages and all those languages were contributed by community members of the Snap! community.

[00:11:44] Elisabeth Riemann

So it's truly global, and

[00:11:46] Jadga Huegle

Yeah,

[00:11:46] Elisabeth Riemann

Multilingual,

[00:11:46] Jadga Huegle

Definitely. Definitely.

[00:11:48] Elisabeth Riemann

Brilliant, and if I might ask about your partnership, so the work you do together with Jens, you're a really good team. How did you start working together?

[00:11:59] Jadga Huegle

That's a good

[00:11:59] Elisabeth Riemann

There's

[00:11:59] Jadga Huegle

Question.

[00:12:00] Elisabeth Riemann

A story in this story

[00:12:01] Jadga Huegle

Yes,

[00:12:01] Elisabeth Riemann

Here.

[00:12:01] Jadga Huegle

There is a story here and actually that happened, so I have not been programming until I turned 25 and I was definitely wanting to keep it that way. And then I did an internship at SAP and tried out some things. And I learned that I really like programming and that's actually awesome. And on some day I met Jens at SAP and he was explaining everything about Snap! In the first meeting, he told me about Lambda Calculus and about how great higher order functions are and everything, which is the pretty advanced stuff in Snap!. And at the beginning I was not super convinced because I was the big gun and I already learned Python. So why should I go back to that baby language? But then at some point I was kind of convinced and Jens is really enthusiastic about Snap!. And he's also really good at selling it to people. So they get the ideas and they want to learn it. And so I started learning it. And he's right. It is the best programming language.

[00:13:01] Elisabeth Riemann

Brilliant, and Jadga I think you mentioned on the openSAP platform that you started programming when you were working on a connected greenhouse. Do you still have a connected greenhouse and in what way is it connected?

[00:13:13] Jadga Huegle

Actually, I left it at a SAP, so the greenhouse was meant as a demo for the D-Shop, our internal makerspace, and I built it. Actually, I was there as I'm originally a biologist and I was there in the internship to consult them for biological questions. But then I had so much fun programming it that I just did everything myself. And what we did there was we had a Raspberry Pi and some sensors, and then we connected them so we could measure the light intensity, the water amount of water in the soil, also the temperature, and then we could regulate different things in that greenhouse thing.

[00:13:51] Elisabeth Riemann

Cool and Jens, you come from a legal background, so how did you make the transition to Snap!?

[00:13:57] Jens Moenig

Well, that's a long story, we can do a separate podcast on that, but essentially the idea is that, yes, I was a lawyer and at one point I kind of remembered what I really love to do as a kid, and that was programming. And it sort of got me back to checking out some of the hot projects online. And I was always and still am kind of a fan of this programming language called Smalltalk. And I was looking around for what's happened to Smalltalk. And I found out Scratch because at the time Scratch was written in Smalltalk. So my interest in Scratch really came from, wow, what has happened to this really nice programming language? And so somehow one thing led to another. And and I started kind of actually hacking Scratch to add some features to it that I would find useful. And I didn't know at the time and honest to God, that MIT likes being hacked. So I got this phone call from from Reznik and he invited me to the first press conference and then offered me to to work from Scratch. And and then I sort of considered my career and said, you know what? I actually love programming much more than lawyering, which I also love. But yeah. So I just decided to change professions.

[00:15:40] Elisabeth Riemann

Excellent, and Jens, you're very modest, but I know that you recently won a recognition award, so maybe you could tell us a little bit about that award.

[00:15:50] Jens Moenig

That was actually a surprise because I didn't yet win any awards, so it was actually the award was given to both Brian Harvey and me. We won it together and it is by the National Technology Leadership Summit of the United States that so as we learned an organization of 12 teacher organization, a coalition, and it's a lifetime award and educational visionary award for someone who has had an impact on the use of technology in education. And I was very humbled by that, but also somewhat worried because, you know, is it that time in my life that I'm getting lifetime awards, already reflecting on my life in the past tense is still somewhat unsettling,

[00:16:43] Elisabeth Riemann

You don't

[00:16:43] Jens Moenig

But

[00:16:44] Elisabeth Riemann

Need

[00:16:44] Jens Moenig

It's

[00:16:44] Elisabeth Riemann

To do

[00:16:44] Jens Moenig

Great

[00:16:44] Elisabeth Riemann

That,

[00:16:44] Jens Moenig

That we got the award.

[00:16:46] Elisabeth Riemann

And I think it's very well deserved, so congratulations from us all. In your latest course I love how you say that we start with media computation like toddlers by taking things apart, rearranging the pieces, and then we progress like scientists, breaking things big time until we get down to numbers and encoding. And it's honestly so much fun the way you take this approach. And a lot of thought goes into this. I wanted to ask you, what's the best way for someone to get started with computer science and with Snap!? Can you talk us through your course offering?

[00:17:22] Jadga Huegle

So we have three courses available on openSAP one introductory one, which is called Get Coding with Snap!, and that's definitely also the one that I would recommend for getting started with Snap!. It's a course that contains 11 projects about basic programming ideas. And we also take a glimpse into some more advanced things like recursion. But it's basically about the introduction to programming, where you learn about loops or conditionals so the basic structures that you learn in introductory programming. Then we have been working for quite a while on our new course, which is called From Media Computation to Data Science. And this really wants to bridge the gap to advanced programming concepts. We're looking at higher order functions. We're working with data, lots of data that we retrieved from different digital media. And we want to show the functional programming approach. We want to generate stuff. And that's more in advanced offering that we want to watch, that we hope people might be interested or are interested after taking the initial course. And then we also have a third course, which is called Build Your Own Snap! Workshop, which is more addressed at educators. How they, it's a repository basically of Snap! materials that we came up with and they can go there, check it out. And we also have some small tips and tricks on how to run a workshop, how to set up the whole event if you want to run an after school coding club or something. So those are the three offerings that we have on openSAP.

[00:18:54] Elisabeth Riemann

We'll include all those notes in the show notes too. And one question I'd like to ask in that context is how much fun do you guys have in the studio? Because I find your enthusiasm is truly infectious. And when you're there in front of the camera playing instruments, doing design projects, it's just amazing. Do you have a lot of fun there?

[00:19:12] Jadga Huegle

Yeah,

[00:19:13] Jens Moenig

Yes.

[00:19:13] Jadga Huegle

Definitely for the first, before we recorded the first course I wasn't really sure if I wanted to do that or if it would be fun, but in the first video, so we were in the video studio with Miguel and he's an awesome person to be with in the video studio. And it's just fun. Everything is so smooth and everything works great. It's super easy to work with the video studio guys and openSAP and I, I would do it any time.

[00:19:45] Elisabeth Riemann

It's an awesome team, right?

[00:19:46] Jadga Huegle

Yeah.

[00:19:48] Elisabeth Riemann

And Jens some of your highlights from the courses?

[00:19:54] Jens Moenig

It's again, it's hard to pick one. I mean, you have to realize that what we are showing in the courses and and kind of what comes out in the curriculum really is the result of a very chaotic creative design process where we just fool around and try things that, you know, we read somewhere. Oh, here's an interesting problem. Let's see whether we can solve it. Oh, here's an idea. Let's see what you can make out of it. Would this actually work? And then we fool around and then we joke around and then we come up with, oh, how about we called this? And then there's some fun, you know, and and, you know, often enough these things don't work. So so there's a lot of failure involved. And then we try something else and then it doesn't work really. Right. And we try it with with kids or with colleagues or with teachers. And we we iterate over it. We try it again, slightly different. And so what comes out of this is really

eclecticism. We cherry pick the things that we find that really work. And so what you don't see or we hope that you actually see is all the fun we're having and developing these things. So our design process really is very chaotic. It's very broad. So we're having all this loads of fun. And what you're seeing is the distilled version of it.

[00:21:29] Elisabeth Riemann

Brilliant. And I'd love to be a fly on the wall during this design process, and my next question was going to be how you come up with brilliant names of your units. I'm just going to list them now, like Raise Your Voice - The One Person Chorus, the Enchanted Mirror, Point Out - Becoming a Painting. Whose ideas were these and how can you tell us about maybe the Enchanted Mirror? How did you come up with that. Can you remember?

[00:21:55] Jadga Huegle

Not exactly, actually, but I have a language thing, so I'm really into language. I also proofread books for friends and stuff, so I'm really into language. So I personally for me, it's very important to have catchy titles that people might find interesting. So we also spend some time thinking about them. The Enchanted Mirror. I really don't remember.

[00:22:26] Jens Moenig

I think sometimes it's just the project names, so we so we try something of the Mirror project, for example, was just something where we're experimenting with an actual mirror and taking it apart and then kind of vexing it to be something interesting. And so, I guess the Brothers Grimm illusion, just started popping up somewhere. So a lot of our lessons really come out of projects. And and so we do several iterations of these projects and then we have to give them names and some just stick.

[00:23:01] Elisabeth Riemann

And they're really appealing names, I mean, you just look through the structure of the course and you think, oh gosh, I really want to do that unit now, it just sounds like so much fun. And, yeah, it really makes me really curious to learn more. So that's great. And Jadga you say that numbers are our friends in the course. Can you explain that a little bit for us?

[00:23:22] Jadga Huegle

So as a person that didn't really like math in school and was a little afraid of numbers, I want to take away the fear of people that see a lot of numbers and think that they can deal with them because basically on computers, everything, if you drill down at some point you'll get to a number. And that's on the one hand side of your afraid of numbers. It's kind of scary. But on the other hand side, it's basically pretty cool because once you are at the numbers, you can apply the same strategies for all types of data, for all types of media. So once you understood it, you can do anything. So it's really great that we can drill down to those numbers and then apply the strategies that we already used last time and that we know that worked. So it's cool if we get to the numbers, they are our friends and it's really great that you can transform them into different things. So, for example, you can create a cipher, which is a pretty simple encryption method by just shifting. No, by shifting letters by a specific number, which is called the key. And you can do that by transforming the letters into their Unicode, which is a number, and then just adding the key. So that's super simple. You can transform audio files by, I don't know, multiplying the sample values and then you can increase the volume or you can divide it by a specific number and then you can decrease the volume. So it's really pretty simple operations and you can do so much with them that I really, I've grown fond of numbers a lot.

[00:25:01] Elisabeth Riemann

That's really good, and if I'm rightly informed, you're a poet, right? So for you to come from a poetry background, someone who's very much into linguistics and languages, to really say you're embracing a new love for numbers. Is that something that you've learned through Snap!?

[00:25:16] Jadga Huegle

Yeah, definitely, so what I what I really like actually is finding abstractions, so I want to generalize patterns and stuff and therefore it's often really important to find the rule that's behind it. And that has often to do with numbers. And I didn't see that at the beginning when I started programming in Snap!, but there's some inherent beauty and elegance in programming and sometimes you have a project that works, but you still want to refine it because you want to get the maximum beautiful outcome or code. And that's something I really learned through Snap! Yeah.

[00:25:53] Elisabeth Riemann

Wonderful and Jens, Snap! has a big community following, so I was wondering, how does this community influence your work and how important are these interactions to you?

[00:26:06] Jens Moenig

It's very, very important. I mean, we're doing this to for the community, we want to broaden participation in computing. So the community aspect, the togetherness of it all, is an extreme motivation for us to develop Snap!. And so it's kind of hard to measure it because we have the kind of the core Snap! website, the Snap! cloud, where we've have roughly half a million user accounts and those users are created roughly four million projects. But there's also Snap! in other applications that aren't connected to our cloud, like there's this wonderful turtles project of Andrea Mayer Stadler in Vienna. There is a 3D printing version that's beadell blocks. There are many, many forks

and many other versions that also use Snap! in some way or another. And we feel that we're all part of this community, of this creative computing, greater Snap! blocks-based computing community. So so this is really a big inspiration for us. And our own community has seen some exponential growth. And that's both elating because we feel like, yes, people like what we're doing. But it's also a little bit terrifying. You know, it doesn't take a pandemic to make you afraid of exponential growth because, you know, also the questions started growing exponentially. Also, the the diversity of needs that members are pursuing on the community side is growing exponentially. So so now we have kids who want to delve into computing, but we also have kids who need to find friends and chat with their friends. And so so we're kind of having to decide in which direction to grow or which

[00:28:10] Elisabeth Riemann

Mm hmm.

[00:28:11] Jens Moenig

Which interactions to foster, how to police the community so nothing bad happens. And it's as much a learning process for us as it is for all learners to learn about computer science. And I think one of the core takeaways really is that computer science programming is something that is squarely embedded into the real world, into all human interactions. So we can't just say we're teaching computing or we're, we're, we're spreading the beauty of programming without also at least dealing in part of human interactions in general and finding out how people work together, play together, and also solve their conflicts together.

[00:29:03] Jadga Huegle

But we've been organizing Snap! conferences the past two years with a lot of members of our community, and I have to say in general, they are all pretty awesome.

[00:29:12] Jens Moenig

Oh, they totally are, yeah.

[00:29:15] Elisabeth Riemann

Excellent. Could you share maybe a couple of your favorite projects from the learning community, then, what are some of the most creative and some of the craziest projects that you've come across over recent weeks and months?

[00:29:29] Jens Moenig

One one thing that it's a while back, but I remember it's hard to find out the craziest thing. There are so many crazy things. I mean, I just love spending hours on our Web page browsing through new projects. And we have this little chat group among ourselves where often, you know, have you seen this project? Oh, my God, this is crazy. How do they even do it? This is amazing. There are also these really heartwarming stories. Like I remember what we were getting this email from a teacher in Massachusetts who said, wow, I got approached today from the school psychologist about this child who has autism spectrum disorder spectrum and didn't used to interact with his peers. And what has happened is the past two weeks he's been hanging out with others working on this game and they've been obsessing over it. And he was part of the gang and leading the pack to writing this game. And so the teacher sent us this project and it was like a really cool fun to play project. So we all played and tried to beat the high score of the kids who did it. So that was, you know, heartwarming in so many ways because we felt there is there there are things going on on many levels. There's learning going on the results of the social interaction. There's even some aspect of inclusion. So these are moments that I really love.

[00:31:04] Elisabeth Riemann

Now, that's so heartwarming, as you say.

[00:31:07] Jadga Huegle

And there are a lot of really enormous projects where people use 500 sprites and they work perfectly together. But what I really like as well is the small projects that capture a great idea that are really simple to do what they're sometimes just use five or six blocks, but the result is just mind blowing. So in our course, there's this one teacher, Matthias, from Switzerland and he did all the exercises and he always added something that I didn't think of. Wow. This is this is astonishing. Why did that not come to my mind? And all these projects are amazing. And he just changed little things that make make the projects so much better. And that's what I really like about the projects in our community that they get also remixed by others. And then they can add to an idea and then it's a great community project and everything gets better in the end. So I really like that.

[00:32:03] Elisabeth Riemann

That's amazing and a true community, too, and Jadga you mentioned just there, a Sprite, for listeners who aren't familiar with the term Sprite, what is that exactly?

[00:32:12] Jadga Huegle

So in Snap!, you program with those graphical blocks, but what you program is an object which we call Sprite, and you can think of it as an actor that plays on a stage. So and the top right corner of the Snap! window, there's the stage where the play happens. And what happens is what you program in your actor, which we call the Sprite, and you have kind of one Sprite. So it's more like a monolog or you can have multiple Sprites to make your actual play.

[00:32:44] Elisabeth Riemann

Thanks for that. And what's your future vision for Snap! Jens? What do you see coming in in the coming months?

[00:32:51] Jens Moenig

That's easy, take over the world.

[00:32:54] Jens Moenig

No,. Seriously, we're in the business of spreading the beauty and joy of computing, but, you know, there's also a secret agenda. And the secret agenda is we want to also reclaim the beauty and joy of computing for professionals, for for adults, and especially also kind of get a greater awareness for the design process of tinkering, refining, failing and cherry picking the results. This is kind of coming out of really the constructionism idea of pedagogy. And we think it's got something to say for even how we do software at SAP. We truly believe that this process really has an intrinsic honesty to it compared to, let's say, a top-down strategy and execution. But that's for another podcast.

[00:33:56] Elisabeth Riemann

We're going to have to have you back. There are so many topics that I've listed now. So as a call to action for our listeners today if we want to support this cause of Snap! taking over the world and us all really been enchanted by the magic of Snap!, what should we do after listening to this episode? How can we learn more?

[00:34:18] Jadga Huegle

So we have a Website, it's called snap.berkeley.edu. There you can find a lot of projects that other people have done, projects that we from the team curated. So those are the projects that are really great and that have some scientific computer science value or also just they look beautiful. And then, of course, you can also take our courses on openSAP. As we mentioned, it might be a good idea to start with the introductory class, but then, of course, advance to the media computation class because that's the new thing that I really, really like.

[00:34:55] Elisabeth Riemann

Excellent. And to conclude these episodes, we normally ask our guests to summarize three key takeaways, but this time because you're so enthusiastic about the topic and I know that you both really love Snap! and the work that you do, I'd like to ask you to list the three things that you love about Snap! and why we should love Snap! too. And Jadga, can we start with you?

[00:35:17] Jadga Huegle

Yes, yes, so the three things I like about Snap!, it's definitely liveness, so I have to take away everything from Jens. Thank God I'm the first one. so it's definitely

[00:35:29] Elisabeth Riemann

It wasn't

[00:35:30] Jadga Huegle

Like

[00:35:30] Elisabeth Riemann

Deliberate.

[00:35:30] Jadga Huegle

It's definitely liveness. So I really like the explorative nature that you get out of that so you can click on every block, you can tinker, you can try things out. And that makes it a lot of, yeah, it just makes it a lot easier. The second thing I think so I have been giving a talk at this year's Snap! conference about the one block to rule them all, and that's actually my absolutely favorite thing in Snap!, it's the map block. It's a higher order function that lets you apply another function on a whole list of data. And it makes everything that has to do with huge list computations so easy, so simple and so beautiful. So that's my absolutely favorite thing about Snap!. And then, of course, it's the community. So being at the Snap! conference this year, again, which had to be virtual because of things. It just has been a blast, we have we've had game nights, we've had a get together virtual and everything was just so fun. So the community is just great.

[00:36:37] Elisabeth Riemann

Yeah, that's amazing. And Jens what three things, if you can summarize it in three things, what three things do you love about Snap!?

[00:36:44] Jens Moenig

Well, as Jadga has already kind of stolen everything that I had to say, let me state it a little more broadly. Sometimes when you find something emotionally very appealing, like you fall in love with someone, it's hard to put a finger on because there's so much to it. So but you just know and and, you know, that's what happened to me when I saw Scratch that, you know, it's hard to put a finger on what makes it so enjoyable. And this is what we're totally trying to capture in Snap!. It's just something that even though you maybe not appreciate everything that's in there or really just use it, we're pretty sure you're going to love it. And the one thing that maybe I can add to Jadga's list of really important ideas is abstraction. It is it is this this idea that is really behind using computers that we can that these are machines. But there are also, as you know, famous computer scientist Alan Kay said they're

like an instrument of ideas for ideas, and they are so because we can express ideas and then by making generalizations and abstractions and this is what we're really trying to do in Snap!, that we're offering these abstractions that are very sophisticated and trying to make them usable for beginners, for novices, but also for the rest of it for us. And we're pretty certain that once you dive into Snap!, you'll get the hang of why computer science is so awesome, why abstractions are really something that just blow out the ceiling of your creativity and and the sky is the limit.

[00:38:44] Jadga Huegle

Can I

[00:38:45] Elisabeth Riemann

I

[00:38:45] Jadga Huegle

Have

[00:38:45] Elisabeth Riemann

Love

[00:38:45] Jadga Huegle

Your one

[00:38:45] Elisabeth Riemann

This.

[00:38:45] Jadga Huegle

Open answer,

[00:38:47] Jens Moenig

Go ahead.

[00:38:47] Jadga Huegle

Because I have another one that I really want to mention, it's the team. So I learned everything. I learned everything that I know about computer science, basically from Jens and Brian. They are both great teachers. And it's just super fun to work together with Michael, with Lauren, with Dan, with Brian, with Bernard, with Jens. And they often make my day. It's it's it's really just fun working with them.

[00:39:15] Elisabeth Riemann

That's so special, and we'll be sure to mention all your colleagues names then in the show notes, and so they get a mention there, too. And I'd just like to say to both of you, thank you so much for sharing your insights with us today on Snap!. I'm totally in awe of the magic that you bring to the topic and how you really inspire us and our learners to be creative and above all, have fun while we're learning new skills. I think you're absolutely brilliant, you and your team. So thank you so much for sharing your time and energy with us here today.

[00:39:45] Jadga Huegle

Thank you for having us.

[00:39:47] Jens Moenig

Thanks, Lizzie. It's been a pleasure talking to you.

[00:39:51] Elisabeth Riemann

Thank you so much.

[00:39:54] Elisabeth Riemann

I hope this episode inspires you to learn more about Snap! with Jadga and Jens. You can check out their courses for free in self-paced mode on open.sap.com/courses. Here you'll find Get Coding with Snap!, From Media Computation to Data Science, and Build Your own Snap! Workshop. Have fun while you learn and enjoy being on the bright side of computer science!

END OF TRANSCRIPT



